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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,702	02/11/2004	Lawrence C. Gunn III	LUX-P022	5712
7590 Fernandez & Associates, LLP PO Box D Menlo Park, CA 94026-6402			EXAMINER WONG, ERIC K	
			ART UNIT	PAPER NUMBER
			2883	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/18/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/777,702

Applicant(s)

GUNN ET AL.

Examiner

Eric Wong

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-26 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 10 and 18-23 is/are rejected.
- 7) ☒ Claim(s) 8 and 11-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/06 has been entered.

### ***Response to Arguments***

Examiner thanks applicant for the response and detailed arguments submitted 10/30/06. These arguments have been taken into consideration before the drafting of this office action.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 9-10 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number 5,864,424 to Nakano and further in view of United States Patent Number 6,603,781 to Stinson et al (hereinafter Stinson).

Nakano discloses a multi-wavelength light source (column 1, lines 8-15) comprising:

- A gain medium (1) which emits light of a plurality of wavelengths (input wavelengths  $\lambda_1-\lambda_n$ ) in response to pumping, the gain medium disposed in an optical cavity (11 and column 2, lines 30-38); and

- An optical equalizer in the optical cavity, the equalizer (2) adjusting the optical power of at least one of the wavelengths so as to provide more even optical power distribution among the plurality of wavelengths propagating through the optical cavity (column 2, lines 54-62).

Nakano further discloses multiple amplification and filtering means to provide for even power distribution.

As to claims 2-3, Nakano discloses that the equalizer is capable of accommodating demanded bandwidth ranging from several nanometers to several ten nanometers.

As to claim 5, an Erbium-doped amplifier (EDFA) is disclosed.

As to claim 18, a multi-layer equalizer is disclosed.

As to claim 19, the equalizer attenuates light.

As to claims 21-23, a monitor and monitor sender are disclosed (7b).

However, Nakano fails to explicitly disclose repetitively passing light through a gain medium. Examiner notes that a single feedback loop would constitute a “repetitive” passing.

Stinson discloses a multi-wavelength source using an optical cavity and an optical equalizer with feedback means (see figure 4). Stinson further discloses that such feedback may be power-related or wavelength-related

Since Nakano and Stinson are both from the same field of endeavor, the use of a feedback loop mechanism as disclosed by Stinson would have been recognized in the pertinent art of Nakano.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to repetitively input light into the system disclosed by Nakano using the

feedback principle disclosed by Stinson and as is known in the art, to further suppress noise and reduce optical errors.

4. Claims 6-7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano as applied to claims above, and further in view of Stinson.

Nakano discloses the invention as claimed except for the presence of reflective mirrors. Nakano does disclose that any suitable type of amplifier or source may be used.

Stinson discloses an optical cavity VCSEL light source utilizing a plurality of mirrors to lock modes (M1-M3) and to detect phases.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the suitable amplifying source disclose by Stinson in the invention of Nakano for its intended use and to properly lock a mode to provide for optimal optical output.

5. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano in view of Stinson as applied to claims above.

Nakano in view of Stinson discloses the invention including an equalizer circuit as claimed, but fails to explicitly disclose placement on a silicon-on-insulator (SOI) chip.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the optical equalizer of Nakano on a single SOI chip for the motivation of decreasing the amount of space needed and to make a compact device.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano in view of Stinson as applied to claims above.

Nakano in view of Stinson discloses EDFAs, but fails to explicitly disclose an indium phosphate-based gain medium. Examiner notes that use of EDFA or Indium-based gain mediums and their interchangeability are commonly known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use indium phosphate in place of Erbium, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

#### ***Allowable Subject Matter***

7. Claims 8 and 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims contain allowable subject matter as indicated in the prior office actions.

8. Claims 24-26 are allowable for the same reasons indicated in the prior office actions.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 571-272-2363. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2883

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



EW



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